Attachment C
TEAM VALIDATION PROCESS

Materials:

Program Standards/Measurement Criteria

DRAFT of Program Related Math Skills

Arizona Mathematical Standards—High School (9-12) (2 copies per team)

Team Validation Process

Process:

1. Review the **Team Validation Process** document for the steps to validate the math-CTE linkages.

2. Review the **DRAFT of Program Related Math Skills** by starting with the first math standard listed and continuing to the end of the document. The team must AGREE, MODIFY, or DELETE each math-CTE linkage, which includes the math standard, measurement criterion, math usage, and math example. The team's outcomes should be documented on the **Master Copy** by the team facilitator or designated recorder.

3. Record on the list of **Program Standards/Measurement Criteria** the number of times a measurement criterion is linked to a math standard by placing a number to the right of the measurement criterion, (e.g., 1, 2, …).

4. After review the analysis results, look at the measurement criteria that have not been addressed and identify math-measurement criterion linkages, along with the appropriate usage and example. Use the blank form provided.

UNDERSTANDING THE COMMON CORE MATHEMATICAL STANDARDS

The common core mathematics standards are listed in **Conceptual Categories** that portray a coherent view of high school mathematics.

Conceptual Categories

Number and Quantity • The Real Number System (N-RN) • Quantities (N-Q) • The Complex Number System (N-CN) • Vector and Matrix Quantities (N-VM) **Algebra** • Seeing Structure in Expressions (A-SSE) • Arithmetic with Polynomials and Rational Expressions (A-APR) • Creating Equations (A-CED) • Reasoning with Equations and Inequalities (A-REI) **Functions** • Interpreting Functions (F-IF) • Building Functions (F-BF) • Linear, Quadratic, and Exponential Models (F-LE) • Trigonometric Functions (F-TF)	**Geometry** • Congruence (G-CO) • Similarity, Right Triangles, and Trigonometry (G-SRT) • Circles (G-C) • Expressing Geometric Properties with Equations (G-GPE) • Geometric Measurement and Dimension (G-GMD) • Modeling with Geometry (G-MG) **Modeling*** **Statistics and Probability** • Interpreting Categorical and Quantitative Data (S-ID) • Making Inferences and Justifying Conclusions (S-IC) • Conditional Probability and the Rules of Probability (S-CP) • Using Probability to Make Decisions (S-MD) **Contemporary Mathematics** • Discrete Mathematics (CM-DM)

* Modeling is best interpreted in relation to other standards. Making mathematical models is a **Standard for Mathematical Practice**, and specific modeling standards appear throughout the high school standards.

Mathematical Practices (MP)

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

SAMPLE: PROGRAM RELATED MATH SKILLS (from Accounting & Related Services)

Mathematics Standard #	**CTE Meas. Criterion**	**Math stand is used:**	**Example of math formula etc. used in the MC**
HS.N-Q.1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	ACCT 1.6	To compare foreign currencies and determine how business affects exchange rates	Your company is doing business with companies from Germany and Great Britain. You are going to travel to both countries and need to convert your spending money from United States dollars into Euros and Pounds. You need to determine how many Euros and Pounds you will have if you convert $500 United States dollars into each. 1 Dollar = 0.62 Pounds 1 Dollar = 0.70 Euros # of Euros * Current Exchange Rate # of Pounds* Current Exchange Rate
HS.N-Q.2. Define appropriate quantities for the purpose of descriptive modeling.	ACCT 8.1	To analyze the income statement of a business	If ABC Co. has monthly expenses of $50,000 per month and their sales are $100,000, how much will their net income be? x = net income 100,000 – 50,000 = X
HS.N-Q.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	ACCT 3.3	To compute deductions to determine net pay	The margin of error and tolerance limit varies according to the context. Example: To determine taxable income the student will use current tax tables and need to round his/her current income to the nearest dollar.
HS.A-SSE.1. Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.	ACCT 2.3	To demonstrate the fundamental accounting equation	Students should be able to define the categories of accounts that make up the accounting equation and be able to identify those parts and interpret their meaning in terms of the equation. Accounting Formula Assets = Liabilities + Owner's Equities
HS.A-SSE.1. Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.	ACCT 2.7	To analyze the effect that business transactions have on the basic accounting equation	If a business buys supplies with cash $100: Assets increases by 100 (supplies) and assets decrease by 100 (cash). So the accounting equation is still equal. Assets = Liabilities + Owner's Equity +100/-100 If a business buys supplies on account $100: Assets increases by 100 (supplies) and liabilities increase by 100 (accounts payable). So the accounting equation is still equal. Assets = Liabilities + Owner's Equity +100 +100

PROGRAM: _____

Mathematics Standard #	**CTE Meas. Criterion**	**Math stand is used:**	**Example of math formula etc. used in the MC**